

2017

M.Sc.

3rd Semester Examination

ZOOLOGY

PAPER—ZOO-301

Full Marks : 40

Time : 2 Hours

The figures in the right hand-margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Use separate Answer-scripts for Group-A & Group-B

Group-A

(Entomology)

Answer all questions.

1. Answer any *two* of the following : 2×2

(a) Enlist different roles played by insects towards ecological sustainability.

(b) Name the major sutures present in Insect head.

(Turn Over)

- (c) State the characteristics of an ametabolous insect.
- (d) Highlight the demerits of biological control of insects pests.

2. Answer any *two* questions of the following : 2×4

- (a) Draw the relationships among insects integument, moulting, metamorphosis and neuroendocrine system.
- (b) Schematically highlight major groups of insects which have pest importance.
- (c) Briefly discuss on different types of galls and their mode of development.
- (d) Give a brief description of peritrophic membranes found in insect midgut.

3. Answer any *one* of the following : 1×8

- (a) Define pheromone. Mention biochemical characteristics of pheromone. Highlight the roles played by pheromone in social insects. 1+2+5
- (b) Write the names of two families of insect that exhibit bioluminescence. Describe briefly the mechanism of light production in insects. State the significance of bioluminescence. 1+5+2

Group-B
(Ecotoxicology)

1. Answer any *two* questions from the following : 2×2
- (a) Define Ecotoxicology and state its significance.
 - (b) Write in brief on the xenobiotics and state the properties of corrosive, Neurotoxic, mutagenic and carcinogenic toxicants.
 - (c) Write a note on chelation therapy.
 - (d) Discuss the impact of aquatic toxicology and conservation of Biodiversity.
2. Answer any *two* questions from the following : 4×2
- (a) Classify environmental matters having specific impact on living organism.
 - (b) Describe the toxic action process on any living organism and add a note on subsequent detrimental effect of the same.
 - (c) State the possible route of entry of any toxic chemicals, their source and mechanism of action.
 - (d) Describe the impact of biomagnification of DDT in aquatic food chain.

3. Answer any *one* question from the following : 1×8
- (a) Name the enzymes involved in phase-I and Phase-II reactions of xenobiotic metabolism.
 - (b) State the significance of toxicity bioassay in aquatic ecosystems.
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